

WHAT IS CLAIMED IS:

1. An aligning implement for optical fibers for aligning a plurality of optical fibers, that is adapted to be used in an optical fiber array having a plurality of optical fibers aligned substantially in parallel with one another with a predetermined pitch therebetween, said aligning implement comprising:

a substrate having a plurality of ridges formed on one surface of the substrate substantially in parallel with one another with said predetermined pitch; and

a cover member having a plurality of ridges formed on one surface of the cover member substantially in parallel with one another with said predetermined pitch, and wherein

the width of the ridges of the substrate and the width of the ridges of the cover member are set to have such values that the cover member is movable relative to the substrate in the direction substantially orthogonal to the ridges in a state that the ridges of the substrate and the ridges of the cover member are engaged with one another; and

the substrate and the cover member are arranged such that in the state that the ridges of the substrate and the ridges of the cover member are engaged with one another, sliding of the cover member in the direction substantially orthogonal to the ridges relative to the substrate causes each optical fiber to be nipped, positioned and held between the wall surface of each ridge of the substrate and the wall surface of each corresponding ridge of the cover member.

2. The aligning implement for optical fibers as set forth in claim 1, wherein the one surface of the substrate is formed such that the thickness of one side thereof is thicker than that of the other side thereof, and the ridges are formed on the thicker side surface and optical fibers each having a sheathing are put on the thinner side surface.

3. The aligning implement for optical fibers as set forth in claim 1, wherein at least one guide groove is formed on either one of the substrate or the cover member in the direction substantially orthogonal to the ridges, and on the other of the substrate or the cover member is formed at least one protrusion that is fitted in and guided by the guide groove.

4. The aligning implement for optical fibers as set forth in claim 2, wherein at least one guide groove is formed on either one of the substrate or the cover member in the direction substantially orthogonal to the ridges, and on the other of the substrate or the cover member is formed at least one protrusion that is fitted in and guided by the guide groove.

5. The aligning implement for optical fibers as set forth in claim 1, wherein both the substrate and the cover member are formed by applying an anisotropic wet etching to a silicon substrate.

6. The aligning implement for optical fibers as set forth in claim 2, wherein both the substrate and the cover member are formed by applying an anisotropic wet etching to a silicon substrate.

7. The aligning implement for optical fibers as set forth in claim 3, wherein both the substrate and the cover member are formed by applying an anisotropic wet etching to a silicon substrate.

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8. The aligning implement for optical fibers as set forth in claim 4, wherein both the substrate and the cover member are formed by applying an anisotropic wet etching to a silicon substrate.

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9. The aligning implement for optical fibers as set forth in claim 1, wherein both the substrate and the cover member are formed by applying a dry etching to a silicon substrate.

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10. The aligning implement for optical fibers as set forth in claim 2, wherein both the substrate and the cover member are formed by applying a dry etching to a silicon substrate.

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11. The aligning implement for optical fibers as set forth in claim 3, wherein both the substrate and the cover member are formed by applying a dry etching to a silicon substrate.

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12. The aligning implement for optical fibers as set forth in claim 4, wherein both the substrate and the cover member are formed by applying a dry etching to a silicon substrate.

13. An optical fiber array comprising the aligning implement for optical fibers as set forth in claim 1.

14. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 2.

5 15. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 3.

16. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 4.

10 17. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 5.

18. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 6.

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19. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 7.

20 20. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 8.

21. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 9.

25 22. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 10.

23. An optical fiber array comprising the aligning implement
for optical fibers as set forth in claim 11.

24. An optical fiber array comprising the aligning implement
5 for optical fibers as set forth in claim 12.